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To: Commissioner for Patents
P.O.Box 1450
Alexandria, VA 22313-1450

Fr: George O. Saile, Reg. No. 19,572
28 Davis Avenue
Poughkeepsie, N.Y. 12603

Subject: Serial No. 10/761,003 01/20/04

Tai Min et al.

MAGNETIC TUNNELING JUNCTION FILM STRUCTURE WITH PROCESS DETERMINED IN-PLANE MAGNETIC ANISOTROPY

INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO-1449, Information Disclosure Citation In An Application.

The following Patents and/or Publications are submitted to comply with the duty of disclosure under CFR 1.97-1.99 and 37 CFR 1.56.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 12, 2004.

Stephen B. Ackerman, Reg.# 37761

Signature/Date 4/12/04

U.S. Patent 5,650,958 to Gallagher et al., "Magnetic Tunnel Junctions with Controlled Magnetic Response," teaches the formation of an MTJ device.

U.S. Patent 6,226,160 to Gallagher et al., "Small Area Magnetic Tunnel Junction Devices with Low Resistance and High Magnetoresistance," discusses making use of a tunnel barrier layer formed of an oxidized thin aluminum layer.

U.S. Patent 6,166,948 to Parkin et al., "Magnetic Memory Array with Magnetic Tunnel Junction Memory Cells Having Flux-Closed Free Layers," discusses that sub-micron dimensions are needed to be competitive with DRAM memories in the range of 10-100 Mbit capacities.

U.S. Patent 6,205,052 to Slaughter et al., "Magnetic Element with Improved Field Response and Fabricating Method Thereof," teaches a way of reducing topological coupling by forming an additional layer between a base metal and a spacer layer, the additional layer being crystallographically amorphous with respect to x-ray scattering analysis.

U.S. Patent 5,757,695 to Shi et al., "MRAM with Aligned Magnetic Vectors," teaches the formation of an ellipsoidal MTJ cell.

U.S. Patent 6,351,410 to Nakao et al., "Ferromagnetic Tunnel Junction Random Access Memory, Spin Valve Random Access Memory, Single Ferromagnetic Layer Random Access Memory, and Memory Cell Array Using the Same," discusses forming ring shaped MTJ electrodes to cause the induced magnetic fields to be circumferential.

In "Orientational Dependence of the Exchange Biasing in Molecular-Beam-Epitaxy-Grown Ni80Fe20/Fe50Mn50 Bilayers (Invited)," by Jungblut et al., pp. 6659-6664, 1994 American Institute of Physics, May 15, 1994, J. Appl. Phys. 75(10), experimental results are provided to show that interfacial exchange energy between such layers can be utilized to provide a biasing effect which lowers coercivity (as indicated by hysteresis loop shifts) in crystal growth directions.

U.S. Patent 5,766,743 to Fujikata et al., "Magnetoresistance Effect Film, a Method of Manufacturing the Same, and Magnetoresistance Effect Device," discusses a magnetoresistance effect film having two ferromagnetic layers separated by a non-magnetic layer wherein one of the ferromagnetic layers is formed on an antiferromagnetic layer.

U.S. Patent 6,430,084 to Rizzo et al., "Magnetic Random Access Memory Having Digit Lines and Bit Lines with a Ferromagnetic Cladding Layer," teaches the formation of bit and digit lines (the lines whose currents write and read the MTJ devices) which are clad with shielding ferromagnetic and antiferromagnetic layers to prevent inadvertent switching of adjacent MTJ cells.

Sincerely,

Stephen B. Ackerman,
Reg. No. 37761

Form PTO-1449

OIPE SCANNED APR 15 2004 PATENT & TRADEMARK OFFICE

INFORMATION DISCLOSURE CITATION IN AN APPLICATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
HT-02-027	10/761,003
Applicant: Tai Min et al.	
Filing Date: 01/20/04	Group Art Unit:

U. S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5650958	7/22/97	Gallagher et al.	365	173	3/18/96
	6226160	5/1/01	Gallagher et al.	360	324.2	4/15/99
	6166948	12/26/00	Parkin et al.	365	173	9/3/99
	6205052	3/20/01	Slaughter et al.	365	173	10/21/99
	5757695	5/26/98	Shi et al.	365	158	2/5/97
	6351410	2/26/02	Nakao et al.	365	171	9/13/00
	5766743	6/16/98	Fujikata et al.	428	212	6/3/96
	6430084	8/6/02	Rizzo et al.	365	173	8/27/01

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

-	"Orientational Dependence of the Exchange Biasing in Molecular-Beam-Epitaxy-Grown Ni80Fe20/FeSoMn50 Bilayers (Invited)," by Jungblut et al., pp. 6659-6664, 1994 American Institute of Physics, May 15, 1994, J. Appl. Phys. 75(10).

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant